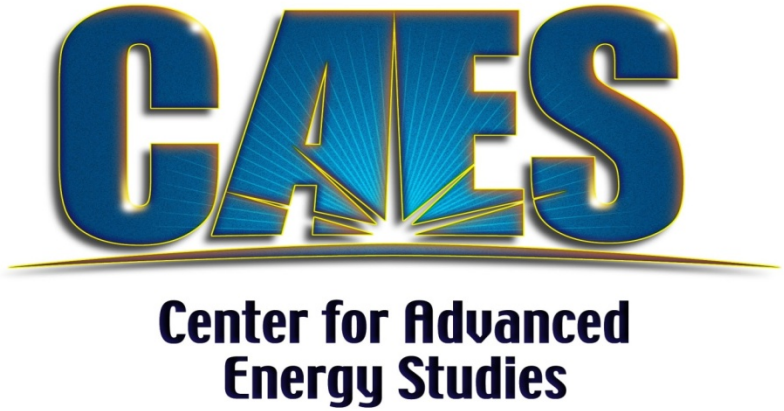
CAES Energy Efficiency Research Institute
CEERI



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Energy Efficiency at Boise State

- Engineering research programs in
  - Building energy modeling
  - Materials (Shape memory alloys, magnetic materials)
  - Integration of renewables to grid
  - Wireless communication (demand response, smart grid)
  - Smart building systems for lighting
  - Green building construction
- Policy research on
  - Financing energy efficiency in buildings

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Energy Efficiency Education at BSU

- ME 497: Energy Efficiency Engineering
  - New upper division elective with emphasis on building energy systems and modeling
  - Beginning of a new curriculum
  - Exploring opportunities to partner with other Idaho institutions for shared curriculum components
- NSF proposal to pioneer new curriculum development model with online course delivery

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Energy Efficiency Research Institute at CAES

- Strong drive from private sector
- Discussions began in 2008
- Support from Boise Chamber of Commerce in March of 2010
- Support from Governor's Office in October of 2010
- Many private sector leaders are at the table

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CEERI: Vision

- A collaboration under the auspices of CAES with participation of the 3 Idaho state-supported Universities
- A 'systems' approach to the efficient and effective utilization of energy with a strong emphasis on integrated design, modeling, communication, control and human factors.
  - World-class, externally funded research
  - State-wide curriculum for energy efficiency
  - State-wide coordination of workforce development at Idaho's community colleges
  - State wide public outreach targeting consumers and professionals with a flagship facility in the Boise, but mobile components throughout the state

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Energy Efficiency Sectors

- Buildings: Commercial
- Buildings: Residential
- Industrial Processes
- Transportation
- Agriculture

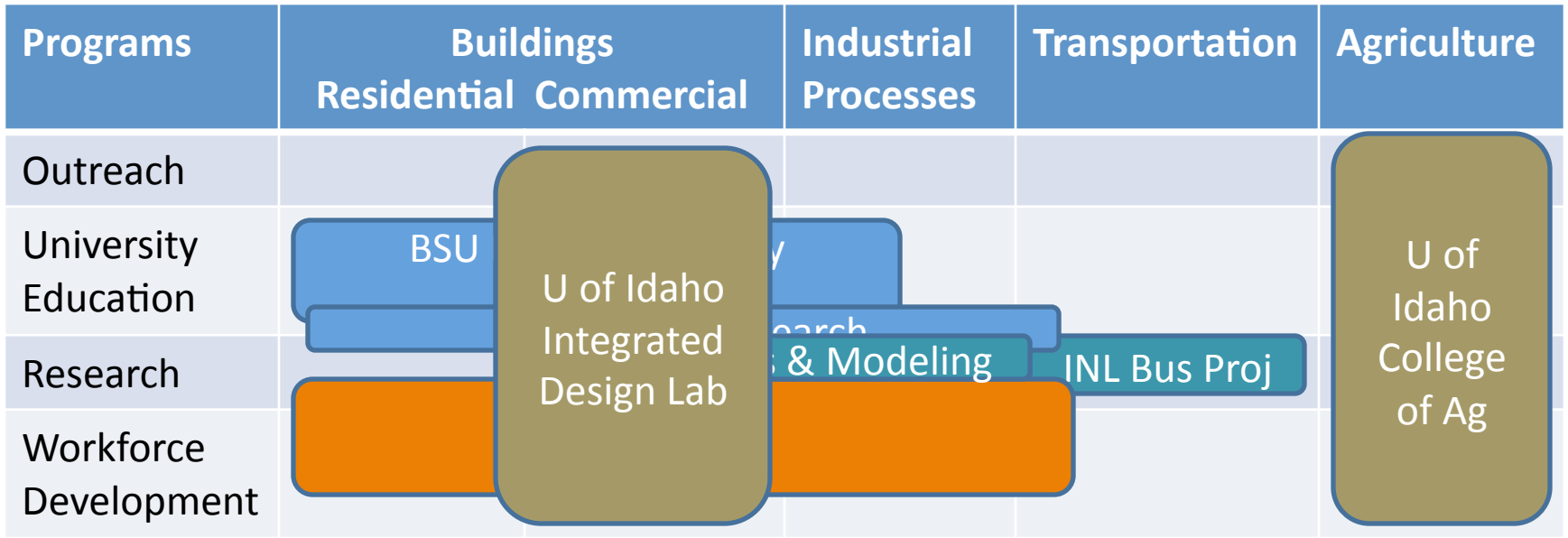
CEERI Programmatic Areas

- Outreach
- University Education
- Research
- Workforce Development

Cross-Cutting Components

- The Smart Grid
- Human Factors
- Public Policy (close ties to EPI)

CEERI Matrix: Examples of Current Capacity



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CEERI Matrix: Filling the Gaps

Programs	Buildings Residential	Buildings Commercial	Industrial Processes	Transportation	Agriculture
Outreach	Energy Outreach Center				
University Education	Integrated Design and HVAC Research		ivery of online er) courses	Future Expansion	
Research			Assess.		
Workforce Development			ve Training		

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Next Steps

- Continue to engage stakeholders
- Continue to engage faculty across the state
- Continue to build research capacity through external grants
- Begin planning energy outreach

Center for Advanced
Energy Studies

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BOISE STATE UNIVERSITY

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Programs	Buildings		Industrial Processes	Transportation	Future Areas
	Residential	Commercial			
Outreach					
University Education					
Research					
Workforce Development					